

$^{27}\text{Al}(\gamma,\gamma')$ 1987Vo01,1995Pi02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 112, 1875 (2011)	30-Nov-2010

1987Vo01: $^{27}\text{Al}(\gamma,\gamma')$, E=7.66, 10.37 MeV; Ge(Li) detector at 127°, measured $\sigma(E,\theta)$. Deduced level energy.

1995Pi02: $^{27}\text{Al}(\gamma,\gamma')$, E < 4.2 MeV bremsstrahlung; HPGe detectors at 90°, 130°, 150°; Measured: E_γ , nuclear self absorption; deduced level energies, level widths and half-lives.

 ^{27}Al Levels

E(level) [†]	J π [‡]	T _{1/2} [#]	g Γ_0 ^{&}	Comments
0	5/2 ⁺			
2212.01 10	(7/2 ⁺)	26.4 [@] fs 7		E(level): From 1995Pi02.
2734.9 7	5/2 ⁺	10 [@] fs 4		
2982.00 5	3/2 ⁺	3.90 [@] fs 9	93 25	T _{1/2} : Other: 3.2 fs 9 (1987Vo01).
3004.2 8	(9/2 ⁺)	49 fs 23	17 10	T _{1/2} : Weighted average of 64 fs 27 (1995Pi02) and 39 fs 23 (1987Vo01) is 49 fs 18. The quoted uncertainty is the smaller one between two experimental uncertainties.
3956.8 4	3/2 ⁺	2.6 fs 3	105 12	T _{1/2} : Weighted average of 2.7 fs 3 (1995Pi02) and 2.5 fs 3 (1987Vo01) is 2.6 fs 2. The quoted uncertainty is from experimental data.
4410.2 4	5/2 ⁺	1.13 fs 15	230 30	
4580.0 8	(7/2 ⁺)	5.3 fs 5	81 8	
4811.6 5	5/2 ⁺	1.55 fs 25	94 15	
5155.6 8	3/2 ⁻	2.4 fs 3	100 12	
5432.8 10	7/2	5 fs 3	60 40	
5438.4 8	5/2 ⁻	5 fs 4	70 50	
5550.9 5	5/2	2.6 fs 5	130 25	
5960.3 7	(7/2)	1.7 fs 12	70 50	
6080.8 9	3/2	3.3 fs 7	64 14	
6284.7 15	(7/2 ⁺)	5.1 fs 21	72 30	
6462.8 13	5/2	0.78 fs 8	490 50	
6477.3 9	(7/2) ⁻	1.8 fs 3	220 35	
6533 1	7/2 ⁺	1.1 fs 8	100 70	
6651.3 7	5/2 ⁻	0.56 fs 3	720 40	
7413 1	7/2 ⁺	0.56 fs 8	8.3×10 ² 12	
7477.1 9	7/2 ⁻	0.68 fs 9	450 60	
7578 2	5/2 ⁺	0.47 fs 7	450 70	
8037 1	7/2	0.43 fs 3	1140 90	
8442 1	(7/2)	0.50 fs 6	640 70	
8676 2				
8731 2				
8752 2				
8772 2				
8898 3				
9053 3				
9500 3				
9597 3				
9657 3				
9794 3				

[†] Up to 8442 keV from Adopted Levels, above this energy from 1987Vo01, except otherwise noted.

[‡] From Adopted Levels.

[#] Deduced by the evaluator from reported $g\Gamma_0/\Gamma=g\Gamma_0$ values (1987Vo01), J assignments, and γ -ray g.s. branching for bound excited states, except otherwise noted.

[@] From 1995Pi02.

[&] In units of meV (1987Vo01).